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CENTRAL INTELLIGENCE AGENCY

OFFICE OF NATIONAL ESTIMATES

1 August 1955

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : A Broader Approach to Annual NIE on the Soviet Nuclear Program

1. For the past few years the intelligence community's periodic estimate on Soviet nuclear capabilities (NIE 11-2-55, 18 April 1955, is the most recent) has been prepared entirely by JAEIC. It has been primarily a scientific and technical analysis of: (1) Soviet capabilities to produce fissionable material; (2) the types of warhead and sizes of warhead yields they could have in the short and mid-term; and (3) illustrative examples of ways in which total Soviet stockpile might broadly be divided between high, medium and low yield weapons. In large part this situation obtained because the only real intelligence available on the Soviet nuclear program was of the above nature, probably because this program was still largely in the developmental stage.

2. However, we have long concluded that by the end of 1953 "the Soviets had reached a point in weapons technology at which

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they were capable of producing stockpile weapons types dictated by military requirements." In short, the Soviet program is no longer limited by purely technical considerations and the Soviet planners will be guided in future by factors other than the level of their scientific and technical knowledge in this field.

3. At this point there arises a requirement for providing the policymaker with a more comprehensive analysis including not only Soviet scientific and technical progress but such factors as: the probable actual shape of the Soviet military nuclear program; the probable allocation of fissionable material to various military weapons types; probable allocations as between industrial and military uses; and the Soviet estimate of their own future requirements. The Board believes that we must broaden our atomic energy estimates to include such factors if the policymaker is to be properly apprised of the probable magnitude of the Soviet nuclear threat.

4. Under these circumstances the problem facing US intelligence has become more than one which is primarily scientific and technical in character. It will be necessary to: (a) estimate

over-all Soviet strategic plans in order to determine what military requirements for nuclear weapons might be; (b) calculate the costs of Soviet nuclear weapons programs to estimate the likely allocation of Soviet resources between this and other military and economic programs; and (c) relate the Soviet nuclear program to the probable over-all Soviet estimate of their cold war and potential hot war needs. In other words, probable Soviet nuclear energy developments can only be adequately estimated in the context of the whole range of Soviet economic, military and political intentions, and probable trends, as analyzed in such NIE's as our annual over-all Soviet estimate (NIE 11-3-55).

5. Although our previous atomic energy estimates have been prepared by JAEIC, with O/NE and other offices playing little role, a broader national estimate which takes into account numerous political, economic, and military factors beyond JAEIC's terms of reference should have the participation of the Board and IAC agency mechanism. We therefore propose that the periodic atomic energy estimate be handled as are other NIE's.

6. JAEIC would of course remain responsible (as are the EIC and SEC for other estimates of similar specialized nature) for

providing the Board with a precoordinated scientific and technical contribution similar to the present JAEIC estimates. Since a substantive review of this technical contribution would be outside of the competence of the Board, the Board's review of this portion of the estimate would consist primarily of making sure that the S and T estimates required for other portions of the NIE were in fact provided, and of integrating the JAEIC contribution with the NIE as a whole. Thus no change in JAEIC's present substantive role would be involved, and it would continue to have substantive responsibility for the intelligence community's scientific and technical estimates on atomic energy matters. On the other hand the national estimates mechanism, including JAEIC as well as other contributors, would be used to prepare the remainder of the estimate on political, economic and military factors affecting the Soviet nuclear posture. A tentative outline of how we envisage such an estimate would look is attached.

SHERMAN KENT
Assistant Director
National Estimates

Attachment:
Outline terms of reference for an NIE on "Trends in Soviet Nuclear Energy Program."

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TRENDS IN SOVIET NUCLEAR ENERGY PROGRAM

SCOPE

This estimate should run through 1965 although it is recognized that only the broadest projections can be made for the second half of this period. A scientific and technical estimate of Soviet capabilities will be prepared by JAEIC, with ONE representation in observer status. A broad analysis of the probable Soviet program based not only on capabilities, but on other military, economic and political factors, will be prepared by ONE through regular IAC agency contributions, with JAEIC representation in advisory status.

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ESTIMATE

I. Summary of Probable Soviet Scientific and Technical Capabilities

(To be based on the JAEIC contribution and summarize the key points made in the Appendix to this NIE.)

II. Probable Soviet Nuclear Program

(To be prepared on basis regular NIE contributions and regular IAC representatives' discussions, with JAEIC people participating individually or collectively.)

A. Soviet Estimate of Nuclear Problem in Context of World Situation

1. Soviet estimate of importance of nuclear factor in light of estimated Western threat, estimated importance of nuclear weapons, etc.
2. Probable Soviet Strategic Concepts in a Nuclear Age. Resultant Soviet estimate of their military requirements for nuclear weapons (including aid to Satellites and China).
3. Soviet estimate of desirability of stressing peaceful uses of nuclear energy and resultant Soviet requirements.

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4. Economic Problems - cost of nuclear program; possible competing demands for resources, etc.

B. Probable Trends in Soviet Nuclear Program 1956-65

1. Objectives USSR will wish to achieve in light of estimates in II A above.

   a. weapons for Soviet forces

   b. military aid to Satellites and China

   c. industrial objectives

   d. industrial and research aid to Satellites

2. Probable Present Soviet Nuclear Program

(Based on estimated capabilities in I above, as modified by requirements in II A above.)

3. Probable Programs as of 1960

   a. military

   b. industrial

   c. aid to Satellites, China, neutrals, etc.

4. Probable Programs as of 1965

   a. military

   b. industrial

   c. aid to Satellites, China, neutrals, etc.

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APPENDIX

PROBABLE SOVIET SCIENTIFIC AND TECHNICAL CAPABILITIES

(To be prepared by JAEIC as an analysis of past and existing Soviet progress and Soviet technical capabilities.)

A. Background. Brief historical review of Soviet nuclear progress since 1945.

B. Present Status of Soviet Capabilities

1. Production capabilities for fissionable material.

2. Probable present stockpile.

3. Types and yields of weapons probably available.

4. Capabilities for industrial use.

C. Trends in Soviet Capabilities 1955-65

(This section would analyze what we think the Soviets could do; it should continue to give a range of possibilities. On this basis Section II would then explore what we think they will actually do.)

1. Trends in capabilities for production of fissionable materials.

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2. Trends in sizes and yields of weapons, including missile warheads.

3. Possible weapons stockpiles.